

Docket Number: 081468-0304500
Client Reference: P-1503.010-US



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

HANSEN

Group Art Unit: 2825

Application No.: 10/716,439

Examiner: NOT ASSIGNED

Filed: November 20, 2003

Confirmation No.: 6626

For: LITHOGRAPHIC APPARATUS AND METHOD FOR OPTIMIZING AN
ILLUMINATION SOURCE USING ISOFOCAL COMPENSATION

May 10, 2004

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. One copy of the Liebchen application and each article is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. Applicants respectfully request the Examiner return an initialed copy of the enclosed Form PTO-1449 to Applicants with the next Office communication to indicate that the reference(s) has been considered, per MPEP § 609.

This Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits in the present application. No certification or fee is required.

This application is one of a series of related applications, identified in the attached Appendix, which are directed to related technical subject matter. The identification of those U.S. Patent Applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent. The Examiner

HANSEN - 10/716,439
Docket No. 081468-0304500

is respectfully requested to consider the cited applications and the art cited therein during examination.

Respectfully submitted,

PILLSBURY WINTHROP LLP

A handwritten signature in black ink, appearing to read 'C. F. Lair', written over a horizontal line.

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HANSEN - 10/716,439
Docket No. 081468-0304500



APPENDIX

| Examiner's Initials | First Inventor | Application No. | Filing Date | Enclosed |
|---------------------|----------------|-----------------|-------------------|--|
| | Liebchen | 10/705,234 | November 12, 2003 | <input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: Claims |
| | | | | |

The Examiner's initials indicates he/she has considered the cited application relative to the subject application.

DO NOT PRINT the above information on the patent which results from the subject application.



| | | |
|--------------------------------|--------|----------------------|
| Atty. Dkt. No. | M# | Client Ref. |
| | 304500 | P-1503.001-US |
| Applicant: HANSEN | | |
| Appln. No.: 10/716,439 | | |
| Filing Date: November 20, 2003 | | |
| Examiner: NOT ASSIGNED | | Group Art Unit: 2825 |

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: May 10, 2004

Page 1 of 1

U.S. PATENT DOCUMENTS

| Examiner's Initials* | Document Number | Date MM/YYYY | Name (Family Name of First Inventor) | Class | Sub Class | Filing Date (if appropriate) |
|-------------------------|--------------------|-----------------|---|----------------|--------------|------------------------------------|
| | AR | 5,680,588 | 10/1997 | Gortych et al. | | |
| | BR | 2003/0082463 A1 | 05/2003 | Laidig et al. | | |

FOREIGN PATENT DOCUMENTS

| Document Number | Date MM/YYYY | Country | Inventor Name | English Abstract | Translation Readily Available |
|--------------------|-----------------|---------|---------------|---------------------|-------------------------------------|
| CR | | | | Enclosed | No |

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

| | | | | | |
|----|--|--|--|--|--|
| DR | Burkhardt et al., "Illuminator Design for the Printing of Regular Contact Patterns," <i>Microelectronic Engineering</i> , Vol. 41, No. 42, 1998, pp. 91-96. | | | | |
| ER | Chen et al., "Practical Method for Full-Chip Optical Proximity Correction," <i>SPIE</i> , Vol. 3051, 1997, pp. 790-803. | | | | |
| FR | Chen et al., "Optical Proximity Correction for Intermediate-Pitch Features Using Sub-Resolution Scattering Bars," <i>Journal of Vacuum Science & Technology B</i> , Vol. 15, No. 6, Nov/Dec 1997, pp. 2426-2433. | | | | |
| GR | Flagello et al., "Lithographic Lens Testing: Analysis of Measured Aerial Images, Interferometric Data and Photoresist Measurements," <i>SPIE Microlithography Seminar</i> , 1996. | | | | |
| HR | Flagello et al., "Towards a Comprehensive Control of Full-Field Image Quality in Optical Photolithography," <i>SPIE Microlithography Seminar</i> , March 1997. | | | | |
| IR | Gau et al., "Strategy to Manipulate the Optical Proximity Effect by Post-Exposure Bake Processing," <i>SPIE</i> , Vol. 3334, 1998, pp. 885-891. | | | | |
| JR | Gau et al., "The Customized Illumination Aperture Filter for Low k1 Photolithography Process," <i>SPIE</i> , Vol. 4000, March 2000, pp. 271-282. | | | | |
| KR | Hsia et al., "Customized Off-Axis Illumination Aperture Filtering for Sub-0.18 μ m KrF Lithography," <i>SPIE</i> , Vol. 3679, March 1999, pp. 427-434. | | | | |
| LR | Liu et al., "The Application of Alternating Phase-Shifting Masks to 140 nm Gate Patterning: Line Width Control Improvements and Design Optimization," <i>SPIE</i> , Vol. 3236, 1998, pp. 328-337. | | | | |
| MR | Smith et al., "Illumination Pupil Filtering Using Modified Quadrupole Apertures," <i>SPIE</i> , Vol. 3334, 1998, pp. 384-394. | | | | |
| NR | Suzuki et al., "Multilevel Imaging System Realizing $k_1=0.3$ Lithography," <i>SPIE</i> , Vol. 3679, March 1999, pp. 396-407. | | | | |
| OR | Wong et al., "Level-Specific Lithography Optimization for 1-Gb DRAM," <i>IEEE Transactions on Semiconductor Manufacturing</i> , Vol. 13, No. 1, February 2000, pp. 76-87. | | | | |

Examiner _____ Date Considered: _____

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.